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A CASE OF LEUKÆMIC RETINITIS.

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Hirschberg (*Centralbl. f. prak. Augenheilk.*, April, 1887) describes a case of leukæmic retinitis in which the visual sensations were the first symptoms complained of and where the ophthalmoscope led to a diagnosis. Briefly, Hirschberg's case was as follows: The patient, a male aged 33, presented himself because there constantly appeared before his right eye, when looking upon white paper, a dark, balloon-like figure. A central hæmorrhage was found, and in addition numerous minute hæmorrhages studded the retina. A month later a precisely similar appearance was found in the left retina. The discs now became blurred, and the veins were surrounded by white margins, while white patches appeared in the retinæ. The spleen was enlarged and this enlargement was progressive and uninfluenced by treatment. The bones were tender. On examination of the blood the white corpuscles were found about equal in number to the red.

Inasmuch as leucocythæmic retinitis is a rare affection, the record of a case which has recently come under my notice

may prove interesting. This is the more true because as in Hirschberg's case the visual sensations were the first symptoms which caused the patient to come to the hospital for treatment.

Charles G———, aged 21, presented himself in the Eye Dispensary of the University Hospital, December, 1885. He was a school-teacher by occupation. For some time he had suffered with pain in and around the eyes, most marked upon the left side. Before the left eye there was constantly present a bluish spot, one inch in diameter, when he looked at white paper held ten inches before his eyes. The edges of this spot merged on either side into areas of indistinct vision. *O. D.* Vision $^{20}/_{1}$. Nerve margins indistinct, especially at the lower and outer border. Full, broad, tortuous veins; arteries pale, about normal in calibre. Along the course of many vessels yellowish patches and occasionally linear hæmorrhages, Overlying the upper temporal vein a blackish mass, the remains of a former hæmorrhage. Near the outer margin of the disc several striated hemorrhages. In the macular region numerous small, yellowish patches and fine, striated hæmorrhages. The macula surrounded a red-brown margin, within which were gathered numerous white dots and lines, more or less radially arranged around the fovea. *O. S.* Vision $^{20}/_{\infty}$. Nerve margins much more obscured and the discs distinctly swollen. Veins full, pale and tortuous and along the upper temporal vessels a large hæmorrhage. Retina more diffusely infiltrated with yellowish-white patches, the macular region occupied by a large brownish patch, having fringed edges, the seat of a former hæmorrhage.

Some questions elicited that he had had chills and fever, and for some time had suffered from what he supposed was "dumb ague," pain in the back, headache, nausea, etc. He was required to pass urine in the Dispensary, and this when tested showed distinct albumen reaction. Although the retinæ by no means exhibited the appearances found in a typical case of albuminuric retinitis, the presence of albumen in the urine and the lesions in the right macula led me to be-

lieve the case was one of kidney origin. Constitutional treatment was ordered, the man returned once or twice and then disappeared from observation for a little more than a year. After the lapse of this time he reappeared, and presented much more marked constitutional disturbances and an increase in the retinal changes. The broad, pale, tortuous retinal veins, the orange yellow choroid, numerous fresh hæmorrhages and the remains of old ones, the white and yellowish patches in the retinæ and the increased opacity and swelling of the discs presented a striking and characteristic ophthalmoscopic picture. The patient was referred to Prof. W. Osler for general treatment, who admitted him to the Medical Wards of the University Hospital and from whose subsequent examinations and records I am kindly permitted to quote.

In addition to the history already recorded it may be added that as a lad this patient was healthy. When twelve years of age he had a prolonged attack of intermittent fever. During 1885 he had the afternoon headache, nausea and malaise of which he spoke when he paid his first visit to the Eye Dispensary. After that, up to the time of his second visit, his chief general symptoms were giddiness, progressive weakness and for three months afternoon fever and heavy sweats. He had frequent attacks of epistaxis and bleeding from the gums. Deafness in both ears developed, and this has remained in the left ear. He has had occasional attacks of diarrhœa and gradual increase in the size of the abdomen. During the last three months before his admission he has felt better, but the nose bleeding continued. His father and all his family are bleeders. There were no cardiac murmurs: the sounds at apex and base were clear. At the base of the neck the sounds were somewhat ringing. The abdomen was greatly swollen and this swelling was most marked upon the left side, due to the presence of an enormously enlarged *spleen*, which existed as a solid mass reaching almost to the symphysis The *liver* dulness in the nipple line was from the upper border of the sixth rib to just below the costal arch. The *lymphatics* were nowhere enlarged and the bones were not increased in

size or tender. Numerous examinations of the *blood* were made. The blood drop was creamy in consistence and of a reddish-brown color. On the day of his admission the examination of the blood yielded the following result:

Red blood corpuscles, 2,470,000.

White blood corpuscles, 617,500.

White to red as 1 to 4.

Two weeks later there were 1 white to 3.62 red and the hæmoglobine was 32%. Ten days later there was 1 white to 2.58 red, and three weeks later the proportion was 1 white to 5.08 red and the hæmoglobine had risen to 40%. The temperature varied from the normal to a little over 100° F. The quantity of urine voided in twenty-four hours was from eleven to eighty-seven ounces and, as before stated, at the first examination contained albumen. There was distinct amelioration in some of the symptoms under treatment, but the patient left the hospital and is not now under observation.

The case[1] just detailed was one of splenic leucocythæmia, to which variety of this disease the retinal changes are almost exclusively confined. As is usual, the one eye was more affected than its fellow. Manifestly two points of interest present themselves for consideration. This patient, although knowing that his general health was below par, came for treatment because of subjective visual sensations, viz., a dark spot before the left eye, fully explained by the large, old, fringed macular hæmorrhage. At the first examination the true nature of the disease was not fully determined, because the retinitis, although not typical, was supposed, on account of the albuminous urine, to be uræmic in origin. Moreover, the right macula certainly exhibited changes similar in appearance to such as are found in primary renal disease, as well as those related to the blood state. This association has been noted and a case in illustration is figured by Poncet (Perrin and Poncet. "Atlas," p. 66, quoted by Gowers's Med. Ophthalmo-

[1] I have already referred to this case in a discussion on Leucocythæmia before the County Medical Society of Philadelphia. Proceedings of the County Medical Society of Philadelphia, Vol. VIII, p. 152, 1887.

scopy, 2d edition, p. 217). Organic kidney disease in this patient was, however, not necessarily a complication, as the presence of the albumen may easily be explained by a mechanical hyperæmia of the kidney due to the pressure exerted by the enormously enlarged spleen upon the renal veins.

AN OPERATION FOR PTERYGIUM.

BY C. M. HOBBY, M.D.,

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The multitude of methods described in the books for the excision, transplantation and strangulation of pterygium indicates that no single method has met with universal approval; and in adding another, which presents some features that I believe have not been described, it is only after six years' trial and more than one hundred operations have convinced me of its value, that I do so. Whatever may be accepted as the course of pterygium, its axis of growth, as a rule, corresponds with one of the meridians of the globe, and it is most frequently developed in that portion of the globe which has been shown by Dr. Young (AM. JOUR. OF OPH., Vol. IV, p. 302) to be peculiarly exposed to external influences.

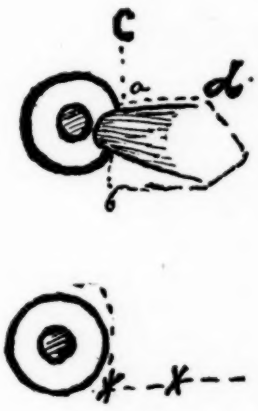
The tendency to recurrence has led to attempts to change the axis away from the cornea, so that additional growth may not further embarrass vision; and the frequency with which the cicatrix left after incision has apparently determined a new encroachment upon the cornea, has led many operators to abandon this operation.

The method to be described secures, first, the change of the axis of the cicatrix, so that instead of pointing to the pole of the cornea, it becomes tangent to the lower margins; and second, the whole cicatrix is removed from the exposed portion, and is covered by the lower lid.

The steps of the operation can be best understood by the diagrams. First, the conjunctiva is incised along the upper margin of the pterygium, as shown by the dotted line (Fig. 3,

a—d) and a vertical incision extended from the margin of the cornea, nearly at right angles (Fig. 3, *a—c.*)

Second, the pterygium is separated from the cornea and an incision downward made, a little lower than the lower margin of the cornea (Fig. 3, *b*).



FIGS. 3 AND 4.

Third, the incisions in the conjunctiva are extended to the base, joined, and the pterygium carefully dissected off.

Fourth, with a strabismus hook the conjunctiva is freely separated above, so as to secure co-aptation without strain.

Fifth, the upper flap of conjunctiva is brought down and secured by two stitches (Fig. 4).

Slight changes in the direction of the incisions will be suggested in very large pterygia, and the pterygium may be in part utilized to increase the upper conjunctival flap.

ON SYMPATHETIC DISEASES OF THE EYE, VIEWED FROM A MODERN STANDPOINT.[1]

BY ADOLF ALT, M. D.

Mr. Chairman.—Sympathetic affections of the eye, since first recognized in their true character, have continually engaged the research and observation of a large number of investigators and clinicians. For many decades the nature of these affections was hidden in absolute mystery, and the theories which tried to explain the phenomena were equally mysterious. The light of modern science having penetrated into many a dark nook of our knowledge, has no less failed to clear up some points in this interesting but hitherto dark subject. If we cannot as yet say, that it is all as clear as daylight, we can at least see the sun rise above the horizon. Perhaps, it is but proper for me to make here the usual excuse for intruding upon the time of this honored assembly with a subject such as I have chosen. If I have hoped that with this subject I might engage your attention, it was for the reason, that sympathetic eye-affections ought to be as well known to the general practitioner as to the specialist in their causes, development and dire results. The subject for some years does not seem to have been brought before you and with what modern science has added to our knowledge, I may, perhaps, be able to interest you a little. If, by doing so, I shall help in saving but one individual from the terrible result of sympathetic ophthalmia I will be well repaid.

What is a sympathetic affection of the eye? We call any affection of one eye due solely to a transmission to it of cer-

[1]Read before the Missouri State Medical Association at Kansas City, Mo., April, 18, 1888.

tain affections from the fellow eye, a sympathetic one. Thus, for instance, if a patient suffers from iritis due to a specific cause in one eye at first, and is later on attacked by the same disease in the fellow eye, we would not consider this second affection in common parlance a sympathetic one, simply because the affection of the second eye is due to the same systemic cause as is the one of the eye first diseascd. From this it will be seen that there exists often a grave difficulty in proving, that in certain eye-affections we really have to deal with a purely sympathetic disease. And this has often given rise to the very natural suspicion, that certain reported cases could not without doubt be admitted to have been purely sympathetic ones. In fact this doubt may be brought to bear on almost every such case, and it will be hard to refute it. Nevertheless, we know from thorough clinical observation, that there are certain eye-affections which are apt to be transmitted to the fellow-eye, and we know, further on, what forms of sympathetic affections are met with, and what is the unchangeable fate of an eye thus sympathetically affected.

What affections of the eye are most prone to lead to sympathetic affections of the fellow-eye? Clinically speaking, any eye suffering from long continued irritation is apt to cause sympathetic trouble in the fellow eye. Such a long continued irritation is in most cases due to a chronic inflammation with visible textural changes, in others it may be due to a long continued mechanical irritation. Among the class of eyes similarly affected, by far the larger number are eyes which have at some time undergone an accidental or a surgical injury. The percentage of cases which, having suffered from an idiopathic disease, cause sympathetic trouble in the fellow eye is extremely limited. In a general way we may say, that eyes which in some way or other have been perforated, thus allowing the entrance of air, are most prone to give rise to sympathetic affection, although there are exceptions. Among these again it has seemed *clinically* established, that the diseases of the uveal tract, and more especially of the ciliary body are in the lead. Clinicians were, therefore, especially afraid

of eyes with a chronic cyclitis and preeminently of eyes with cyclitis dolens.

To sum up, eyes that have undergone a perforating injury, in which a low grade inflammation follows the injury, or in which in consequence of the prolapse and incarceration of a part of the uveal tract (especially the iris and ciliary body), or the presence of a foreign body, or the formation of bone, etc., a continued irritation is kept up, are most apt to cause sympathetic affection. The rarer causes of sympathetic troubles are here omitted.

In what forms do the sympathetic affections appear?

Here we have to distinguish between sympathetic irritation and inflammation. In the former we have no textural changes in the sympateetically affected eye, in the latter grave changes take place.

The symptoms of sympathetic irritation are, loss of working capacity in consequence of hyperæsthesia of the retina, ciliary pains, photopsia, lachrymation. This is a condition which may exist for a prolonged period unchanged, and is usually the precursor of sympathetic inflammation.

The most frequent visible forms of sympathetic inflammation concern the uveal tract, although uncomplicated sympathetic neuro-retinitis is a well recognized, but rare, affection. In a few cases sympathetic keratitis has also been reported. Among the different forms of sympathetic inflammation which attack the uveal tract we have serous iritis, plastic iritis, plastic iridocyclitis, and iridochoroiditis. Sympathetic serous iritis seems to be a lighter form of sympathetic troubles in the uveal tract, and may, and does often get well. Sympathetic plastic iritis, however, although from the start looking like a common plastic iritis proves in the vast majority of cases to be of the severest type. Occlusion and exclusion of the pupil take place, in spite of treatment, with all their usual sequels of an increase of the tension in the posterior chambers of the eyeball (secondary glaucoma), and a slow but steady pushing forward of the periphery of the iris into the anterior chamber, thus giving rise to the condition which bears the classical, but rather incongruous name of

"crater-shaped" pupil. At this stage the disease has in most cases also led to further changes in the background of the eye which preclude the hope of ever being able to restore to that eye even a portion only of its function. Luckily, in some cases the disease comes to a standstill at an earlier period and a sufficient number of cases are on record to prove that by judicious careful treatment we may sometimes succeed in reducing the mischief done by sympathetic iritis to a considerable degree.

In other cases, and perhaps the majority, we have to deal with a sympathetic iridocyclitis and irido-cyclo-choroiditis which are always fatal to the eye thus attacked.

Sympathetic neuro-retinitis, if it remains uncomplicated, can, it seems from the experience of others as well as myself, get perfectly well and must therefore be considered one of the milder forms of sympathetic inflammation.

However, if left to themselves almost all the forms of sympathetic troubles will lead to total and irremediable destruction of the eye which they have attacked. There are some few exceptions to this rule. However, we have to add another which is less encouraging still, namely, that even with so to speak, timely interference, the vast majority of cases of a once established sympathetic inflammation are doomed to utter blindness, an incurable blindness, a blindness which might have been prevented—and this is the saddest as well as the most important point.

What do we know about the mode of transmission of the disease from one eye to the other?

We know that each optic nerve has a dura and a pia mater sheath and between them the intervaginal lymph space. We know that the latter communicates with the intra-cranial cavity on the one hand and with the interior of the eyeball on the other. The dura mater sheath merges in the dura mater proper at the optic foramen, while the pia mater sheath accompanies the nerve to the chiasma, and joins the pia mater of the brain. Both optic nerves as well as their respective pia mater sheaths, meeting in the chiaams, what could lie nearer

than to accept this channel as the simplest and most natural for transmission of the disease? Why seek after mysterious ways and build up theories unproven? Yet, although even the oldest writers on the subject, especillay Mackenzie, had this solution of the question in mind, their ideas were changed by their followers, and, as yet, a number of investigators will have us believe in some mysterious agencies in the production of sympathetic eye affections, although during the last decade abundant proof has been brought forward to strengthen the belief of a great many, that the simplest and shortest way is undoubtedly the one by which the transmission of the disease takes place. It would lead me too far for your indulgence would I attempt to let all the different theories of the transmission of the inflammation in sympathetic eye troubles pass in review before you. Yet, let me mention shortly, that in consequence of a wrongly interpreted remark of Heinrich Müller, not even properly substantiated by him, the idea was promulgated that the ciliary nerves are the real channels by which the transmission takes place. Sufficient practical proof not being offered for such a strange dictum, it had to be supported by all sorts of theories in which certain facts were given an importance far beyond their real value. For instance, Critchett pointed out, that in his experience very frequently when the first affected eye suffered from cyclitis dolens, a painful spot might be found in the ciliary region of the sympathetically affected eye exactly symmetrical to the most painful point in the first affected eye. Although I have personally never had occasion to see this, I do not doubt the fact. Yet, let me ask, can we consider this undoubtedly accidental occurrence a proof of the theory that the disease had travelled from one eye by way of a ciliary nerve into the ciliary ganglion, and to the brain, and medulla oblongata, and then back by way of a symmetrically situated ciliary nerve to the ciliary body of the sympathized eye? It seems to me that this was going a little too far.

Reflex paralysis of motor nerves being proven, a number of authors thought to best explain the occurrence of sympathetic

affections by some sort of a reflex action, perhaps reflex paralysis of sensitive nervs and most recently Theobald has been breaking several lances for this theory.

It seems to me, that reflex-action is to be considered the main factor in what is called sympathetic irritation; but as soon as we have to deal with sympathetic inflammation, this can not and, as yet, has never been satisfactorily explained by reflex-action. Aside from the fact, that the simplest explanation of the natural phenomena observed by us, is most likely to come nearest to the truth, we have ample proof, for those that are willing to believe it, that a direct transmission of the inflammation can take place from one eye to the other by way of the optic nerve and its pia mater sheath and, according to the more recent experiments of Gifford, perhaps, also, by way of certain lymph-channels, (so far demonstrated in animals only) which are said to leave the optic nerve with the central blood-vessels and to pass through the orbital tissues into the intracranial cavity. The direct transmissibility of morbid agencies from one eye to the other by way of the optic nerve and its pia mater sheath, I consider proven by the experiments of Leber, Deutschmann, and myself. There is, however, one point, yet, which is not settled, namely, whether we have to consider sympathetic ophthalmia, as Leber and Deutschman will have it, as a microbian affection due to a certain germ, or not. It is true, Leber has proven, that aseptic foreign bodies brought into an eye under antiseptic precautions may remain therein indefinitely without giving rise to any inflammatory symptoms. Deutschman has even succeeded in culturing a streptococcus taken from sympathetically affected eyes and experimentally produced sympathetic affections–yet, others have not been able to verify this point. Suffice it to say, that it is my opinion, that we know that the materia peccans, whatever it be, is directly transmitted from one eye to the other by way of the optic nerve and its pia mater sheath, or by, perhaps also, the lymph streams described by Gifford, which were just mentioned, and that it is at this date, no longer possible to adhere to all the mysterious theoretical explanations

built up with such an immense amount of brain work. The pathological facts are becoming too powerful, in my opinion, to allow of any other explanation.

What means are at our disposal to combat with so dreadful an affection?

If the old adage that a pound of prevention is worth any quantity of cure holds good anywhere, it surely does so in sympathetic eye-affections. To prevent the disease must be our rule, since in trying to cure it we will in most cases fail most certainly.

In the light of modern science such prophylactic measures have greatly increased in numbers. Antiseptic applications have rendered the results of the primary injuries less to be dreaded. With the aid of the magnet or other appliances foreign bodies may, with greater safety, be removed from the injured eye. By these means certainly a large number of cases which in former days would have produced sympathetic affections are rendered considerably less harmful, even though the primarily affected eye lose its function.

When, however, the injury is such that there is no chance of our controlling its effects, or when the patient is not so situated that he can remain under careful supervision in order to find out the first possible signs of sympathetic trouble, or as soon as such trouble is making its first appearance, the chief prophylactic remedy is the removal of the injured eye with as much of the optic nerve as can safely be removed. It is easy to understand why the removal of such an eye, before a transmission of the disease has taken place, should be a sure prophylactic means with regard to the fellow eye. Why it should be still useful in the beginning of sympathetic trouble and even in some cases of sympathetic iritis, is not as easily explained, and, in fact, has never been explained. Yet, the fact is well established by experience and cannot be denied. On the other hand, some well authenticated cases have been reported in which the first affected eye, after having caused the total destruction of the fellow eye by sympathetic inflammation, could later on by an operation be rendered

a comparatively useful eye. These cases must teach us to discriminate, yet, they cannot be advanced against the prophylactic enucleation of the injured eye, because it is surely more valuable to save the patient one perfectly good eye, than to jeopardize its existence as an organ of vision in the hope of being able to render the injured eye a comparatively useful one after the fellow might have been destroyed by sympathetic inflammation. There was a time when eyes were indiscriminately removed, but this period has passed, and it is no longer necessary to preach against it. What eyes to enucleate, and, when to enucleate, are questions much better understood now-a-days than formerly.

For different reasons substitutes have been recommended for enucleation. The theory of transmission by the ciliary nerves, the overrated danger of death from meningitis after enucleation, the disfiguration, the poor motility of an artificial eye were the leading points in these more recent surgical procedures.

In order to do away with the possibility of transmission by the ciliary nerves, cutting of these nerves was proposed and developed finally into the operations of optico-ciliary neurotomy and neurectomy. They have had their day, and flourished for a while, and have been found wanting. These operations preserved the eyeball, they did, perhaps, some good unintentionally, since the optic nerve was severed; yet, they did not prevent sympathetic trouble after all, because the tissues including the nerves grew together again, or because, the materia peccans being left in the orbit, its transmission to the fellow eye by the channels described by Gifford was not materially interfered with.

More recently evisceration of the eyeball was introduced as a preventative of meningitis and with the idea of leaving in the shape of the sclerotic a better stump for an artifictal eye to rest on. In this operation the contents of the eyeball are scraped out. Mules has even gone so far as to insert an artificial vitreous made of glass or silver and heal it in, so as to have an excellent support for the artificial eye. Aside from

the fact, that the healing after this operation is very tedious and painful, I think the theoretic objection, that it does not do away with the danger whenever the materia peccans has already got into the lymph channels passing through the sclerotic is sufficient to condemn the procedure—and it has surely not gained much favor with the profession.

What is to be done when an eye has been attacked with sympathetic inflammation?

In the first place, as already stated, enucleation of the injured eye is of curative value in sympathetic irritation, and in some cases of sympathetic iritis.

But even when no good can be expected any longer from the enucleation of the injured eye, no man who sees the poor patient going blind before his eyes will give up in despair, and it has been the good fortune of a number of gentlemen and also of myself by persistent and, so to say, heroic mercurialization, combined with local applications, to save once in a while an eye which appeared to be doomed without doubt. Such cases are not frequent, yet, the result, even if only a partial one, is an ample reward for the patience and care such cases will demand.

In cases of sympathetic iritis with secondary glaucoma, the inexperienced is tempted to perform an iridectomy, but this is useless and dangerous, and precludes the possibility of surgical help at a future time, as all such attempts have only the result of having removed a certain portion of iris-tissue and having rekindled the inflammation, while the newly-made pupil promptly closes up again.

The rule is absolutely—hands off!

Later on, after years of patient waiting, when all symptoms of inflammation and irritation have totally disappeared and the eye is at rest, when light perception and projection are good, an iridectomy and sometimes the extraction of a cataract found at this operation, may still be able to give some and sometimes quite useful sight.

TRANSLATION.

THE VISIBLE CIRCULATION IN NEW FORMED CORNEAL BLOOD VESSELS.

BY DR. FRIEDENWALD, OF BALTIMORE.

From Prof. Hirschberg's Centralblatt f. Prakt. Augenheilkunde.

In experiments with Hartnack's spherical magnifying glass[1] (Kugellupe) which has been used at our clinic to great advantage, principally in the examination of the anterior portions of the eye, I[2] had occasion to observe a circulatory phenomenon in the cornea, which owing to its peculiarity, deserves a careful description. I have in vain searched the literature for the report of a similar observation, and had occasion to see with what surprise the numerous guests who come to our clinic, testified to the originality of my observations. The first time I made this observation, was in a case of vascular keratitis. In trying to study the form and arrangement of the blood vessels more closely, I was surprised that I was able to see a distinct blood stream in some of these vessels. The flow was neither uniform nor uninterrupted, but the contents of these small vessels were divided into small particles, and these particles moved now by jerks, now in a steady course. The picture may be best compared to an exceedingly fine rosary with some beads here and there lacking. The

[1] The lens is aplanatic and achromatic, and according to the manufacturer's statement, gives a magnifying power of from 20 to 22 times at a distance of 250 mm.

[2] Cf. Hirschberg, Ophthalmoscopy in Eulenburg's Cyclopædia. 1st Edition, 1882; Vol. X. p. 134.

red columns are separated from one another by colorless intervals.

The latter attain the greatest length in the narrowest vessels. The red columns also vary in length; sometimes they are so small that they are hardly visible, and again they appear to fill the lumen of the vessel perfectly and are often much longer than broad. It could be plainly seen how this chain of red and white columns moved with great velocity in the broader vessels, and much slower in the smaller ones which resembled capillaries. In the majority of cases I undoubtedly had to deal with venous blood vessels for the direction of the current was toward the periphery of the cornea from the smaller to the larger branches. Where this could not be positively proven, the vessels, owing to their fineness and numerous anastomoses, bore the character of capillaries. It remains, therefore, still doubtful if the arterial vessels show the same phenomenon.

The same observation which I made in the case of keratitis vasculosa just mentioned, I was soon able to repeat in a variety of corneal affections. It could not only be observed in cases of recent, retrograding, or healed keratitis superficialis, but also in interstitial keratitis, whether recent or old, pannus trachomatosus, pannus e trichiasi. This shows that the phenomenon is not characteristic of any one single form. However, it was much easier seen in some cases than others. Even in the smallest superficial blood vessels of the conjunctiva bulbi,[1] the same phenomenon could be observed. I am at a loss to find an explanation of this phenomenon, yet I wish to state, that the circulation as seen under the microscope

[1] I find the following observation in Prof. Landois' text book on physiology, page 182: "With good illumination and with low magnifying powers we may observe the blood vessels of the frog's liver (Gruithuisen 1812), of the pia mater of the rabbit (Donders), of the frog's (swimming) membrane, and of the mucous membrane of the inside of the lids in man (Hueter), and further also of the *conjunctiva palpebrarum et bulbi.*"

A communication from the author tells me, that his observations with regard to these latter blood vessels have not yet been published.

in the membrane of the frog's foot is not the same. Most certainly these small red columns can not be mistaken for single blood corpuscles; moreover, a drop of blood viewed with this lens (Kugellupe) gave a totally different picture, in which the single points were not by far as plain as in the case above reported. I am not ready to decide what these columns and colorless interspaces contain. I hope that further examinations, to which these lines are meant to give the stimulus, will lead to the solution of this question.

For this reason I wish again to emphasize, that great perseverance and attention, a good Hartnack's lens[1] and clear focal illumination are necessary to study this peculiar circulation, and, that even with these it is uncommonly difficult. In this respect I further wish to state that the examination of the smallest blood vessels is the easiest and promises the best success.

I was not spared the experience, that even proficient observers were inclined to deny the existence of this phenomenon after their first attempts to see it, and that after repeated and attentive observation they were surprised by the clearness with which it was to be seen.

[1]The lens is preferable to the corneal microscope on account of the ease with which it may be handled.

CORRESPONDENCE.

EXCESSIVE HÆMORRHAGE AFTER CATARACT EXTRACTION.

KANSAS CITY, MO., April, 1888.

EDITOR AMERICAN JOURNAL OF OPHTHALMOLOGY.—I was very glad to read the admirable paper which Dr. Hotz published in the last number of the AMERICAN JOURNAL OF OPHTHALMOLOGY, on excessive hæmorrhage after cataract extraction. The whole subject is one of great interest and I trust that other operators who, like Dr Hotz and myself, have met with this catastrophe, will publish their experience also.

I agree with Dr. Hotz, however, that such excessive hæmorrhage after removal of cataract must be extremely rare.

I would wish to state in reference to Dr. Hotz's paper where he says that I do not mention the escape of vitreous during the hæmorrhage, that no vitreous, as far as I know in my case, appeared either during or after the hæmorrhage or at any time. I did not see the case for some hours after the blood-flow began, but a very inteligent nurse, one of long experience in nursing eye cases in general and cataract cases in particular was in charge, and took off the dressings at once on the bleeding beginning and looked for vitreous, but is positive none appeared.

Moreover, when I did see the patient later and cleansed the clots from the lips of the incision and coaxed out some of the blood from the anterior chamber, no vitreous came. Nor had the eye the shape or tension of one the vitreous of which was gone in whole or part.

B. E. FRYER, M. D.

ZANESVILLE, OHIO.

EDITOR AMERICAN JOURNAL OF OPHTHALMOLOGY. — The cases of Drs. Fryer, Hotz and Mooren referred to in the March number of the AMERICAN JOURNAL OF OPHTHALMOLOGY, recalled a similar example in my own practice the notes of which are as follows:

A. G., aged 73 years. As usual before operating I examined the case, and found that he could see a light in all parts of the visual field, and I recognized no contra-indications to the operation of extraction of his cataract in the left eye. I operated October 2, 1883, assisted by Dr. C. C. Hildreth, under cocaine and duboisine. No anæsthetics were given. The patient sat during the operation. His cataracts were nuclear and hard, and had existed for several years.

Galezowski's operation was performed successfully. The puncture and counter-puncture, 2 mm. above the horizontal meridian of the cornea and at the corneo-scleral junction. The incision was brought out 2mm. in front of the upper margin of the cornea. The fixation forceps and speculum were removed after the incision was made, and he was enjoined not to compress the eyelids, but notwithstanding this injunction he did this, no doubt also contracting the recti, and forced out the cataract quite suddenly. However, no vitreous appeared, and the iris was not enclosed in the corneal wound, but was in its normal position. I divided the anterior capsule crucially with the point of a narrow ($^1/_2$ mm.)Græfe knife before making the counter-puncture,and in cutting the flap after the counter-puncture, the iris, in its upper segment, was slightly cut before the incision was completed. I did not consider that this accident demanded an iridectomy. After the cataract had been expelled there was only very little blood in the anterior chamber from the very small incision of the iris. The corneal wound was adapted nicely. He saw the light very plainly through the blood after the operation. The eye was dressed with cotton and both eyes were bandaged.

October 3. During the night, at 1 A. M., he was suddenly taken with great pain in the eye, for which he was given hy-

drate of chloral ℥ij, croton chloral ℈ij, morph. sulph. gr. iij, Syr. simplex. f. ℥ij, S. Teaspoonful every hour until easy or sleepy. He took three doses and had no severe pain afterwards. On visiting him in the morning I found the bandages saturated with blood, and the vitreous extruded and covered with blood. I removed the clots covering the extruded vitreous and the vitreous. The iris did not protrude nor was it bleeding. I put on a compress bandage and applied ice water cloths over the eye. Panophthalmitis followed and the eyeball became atrophied. The operation was painful, although the cocaine was reliable. I have noticed this pain in other eye operations in old persons, and have attributed it to some defect in the blood-vessels due to age.

The source of the hæmorrhage in this case, I thought was from the ruptured blood-vessels of the choroid, and this lesion possibly due to spasm of the recti. The choroidal vessels may have been diseased, and this may have been the predisposing cause of the rupture. H. CULBERTSON.

EDITOR AMERICAN JOURNAL OF OPHTHALMOLOGY—Sir,

Charged by the Committee of the Ophthalmological Society of Heidelberg, which is commissioned with the preparation of the International Ophthalmological Congress, to be held at Heidelberg from the 9th to the 12th of August, 1888, we apply to you with the request that you will peruse the inclosed programme and favor the meeting with your kind support.

In inviting our foreign colleagues to the International Congress, we have two objects in view, viz., first to celebrate in a solemn manner the 25th anniversary of our, the oldest Ophthalmological Society, and, at the same time, to connect our celebration with the preceding six Lustres of the International Ophthalmological Congress.

This Congress has labored of late under great difficulties, and shows serious symptoms of decay. By convoking it for the time when we celebrate the anniversary of the foundation of our Society, we meet the wishes of a great number of col-

leagues, all of whom would with us deeply regret, if the International Congress, after its previous successful labors, should come to an inglorious end.

We hope that, by accepting Landolt's motion, the Congress will be animated with a fresh, vigorous life. But, in order to arrive at this desirable end, it is highly necessary to secure the active interest of our colleagues at home and abroad, and among the latter your kind cooperation.

We inclose a preliminary *i. e.*, provisional programme of the forthcoming Congress with the request that you will procure it the greatest possible circulation among your colleagues.

We shall consider it a very great favor if you will kindly tell us that you accept our invitation.

The final programme will be forwarded towards the end of May. Notices of lectures or papers we beg you to address to one of the undersigned.

OTTO BECKER,
Heidelberg.
W. HESS,
Mainz.
J. STILLING,
Strassburg i. E.

Heidelberg, March, 1888.

PROVISIONAL PROGRAMM

OF THE SEVENTH

PERIODICAL INTERNATIONAL OPHTHALMOLOGICAL CONGRESS.

To be held at Heidelberg, August 9 to 12, 1888.

On the opening day, August 8, until 9 o'clock a. m. inscription of members and visitors.

Thursday, August 9.

1. Meeting at 9 a. m.
   Reception of members and visitors by a member of Committee.
   Election of President, Secretary and other officers.
   Report on "Glaucoma." Reporter: Mr. Priestley Smith (Birmingham).
   Second Reporter: Mr. Snellen (Utrecht).
   Discussion.
2. Meeting at 3 p. m.
   Lectures and Papers, of which previous notice has been given.

Friday, August 10.

3. Meeting at 9 a. m.
   Report on "Cataract." Reporter: Mr. Gayet (Lyon).
   Second Reporter: Mr. Schweigger (Berlin).
   Discussion.
   Lectures and Papers, of which notice has been given.
4. Meeting at 3 p. m.
   Lectures and Papers, after previous notice.

Saturday, August 11.

5. Meeting at 9 a. m.
   Report on "Bacteriology." Reporter: Mr. Leber (Göttingen).
   Second Reporter: Mr. Sattler (Prag)
   Lectures and Papers, after previous notice.
6. Meeting at 3 p. m.
   Lectures and Papers after previous notice.

In the evening at 6 o'clock congressional supper in the Old Castle.

Sunday, August 12.

Particular morning arrangements reserved.

During the afternoon Fête Champêtre in Ziegelhausen, in the valley of the Neckar, arranged for the Congress by the City of Heidelberg, with boat excursion on the Neckar. After sunset illumination of the Old Castle.

Notice: The general meetings of the congress are expected to take place in the Aula of the University. For demonstrations and experiments special rooms will be reserved.

THE PROVISIONAL COMMITTEE.

EDITORIAL NOTICE.

MEETING OF THE AMERICAN MEDICAL ASSOCIATION—HELD AT CINCINNATI, MAY 8, 9, 10, AND 11, 1888.

Section of Ophthalmology, Otology and Laryngology.

Chairman—F. C. Hotz, Chicago, Ill.

Secretary—Edward Jackson, Philadelphia.

First Day.

Address by the Chairman, F. C. Hotz.

"Melanotic Diseases of the Conjunctiva and Episcleral Tissue, with Five Illustrations," by Rob. Sattler, of Cincinnati.

"Ocular Troubles Influenced by Nasal Diseases," by L. H. Taylor, of Wilkesbarre, Pa.

"Binocular Astigmatism," by H. Culbertson, of Zanesville, Ohio.

"The $^1/_4$ Dioptric Cylinder Lens the Most Useful of the List of Cylinders," by J. J. Chisolm, of Baltimore.

"The Treatment of Strabismus due to Paralysis or Extreme Over-correction with Loss of Motion," by A. E. Prince, Jacksonville, Ill.

"The Size and Illumination of Test-type," by E. Jackson, Philadelphia.

Second Day.

"Some Practical Suggestions Regarding Certain Anomalies of the Ocular Muscles, by George T. Stevens, of New York.

"Gummata of the Ciliary Region," by S. C. Ayres, of Cincinnati.

"On Nutrition, or the Constitutional Treatment of Diseases of the Ear," by Laurence Turnbull, of Philadelphia.

"Some Remarks on Diseases of the Labyrinth," by Francis Dowling, of Cincinnati.

"The Bougie in Catarrhal Inflammations of the Middle Ear," by W. Cheatham, of Louisville.

THIRD DAY.

"Reflex Nasal Cough, with Report of Cases," by Max Thorner, of Cincinnati.

"Reflex Phenomena in Childhood Caused by Rhinitis," by J. A. Stucky, of Lexington.

"Naso-Pharyngeal Fibromata," by E. F. Ingals, of Chicago.

"An Interesting Case of Fibroma of the Larynx," by Jos. Eichberg, of Cincinnati.

"Tubercular Laryngitis," by W. E. Welsh, of Grand Rapids, Mich.

"Illustrative Points in the Examination of the Nose and Throat," by Carl von Klein, of Dayton, O.

FOURTH DAY.

"Tobacco Amblyopia," by A. R. Baker, of Cleveland, O.

"The Advantages of Leaving One Eye Open During the After-treatment of Cataract Cases," by J. J. Chisolm, of Baltimore.

"Staphyloma of the Region of the Macula," by E. Jackson, of Philadelphia.

"A Plea for the Better Recognition of the Oculist in the Service of the U. S. Pension Department," by J. W. Wright, of Columbus.

Exhibition of instruments and apparatus.

OBITUARY.

CORNELIUS REA AGNEW, M. D.

Cornelius Rea Agnew M. D., died on Wednesday, April 18, in the fifty-eigth year of his age, after an illness of only a few days' duration—a peritonitis, understood to have originated as a typhlitis.

The deceased was a native of New York, and a graduate of the College of Physicians and Surgeons, of the class of 1852.

For a few years he was a general practitioner, but the greater part of his professional life was spent in the practice of ophthalmology and otology in which department he was one of the first, in New York, to arrive at eminence. At various times he occupied numerous positions of distinction in hospitals and medical societies. He was for many years the clinical professor of ophthalmology in the College of Physicians and Surgeons, and he may almost be said to have created the Manhattan Eye and Ear Hospital. But, excellent as he was in all these capacities, it was not by his strictly professional work that he was known so much as by the devotion and intelligence with which he taught his fellows the duties of citizenship. Although the extent of his services in this direction was known to only a few, enough of them was known to secure his general recognition in New York as one of the most respected of her citizens.

Perhaps the most far-reaching work of his life was what he accomplished as one of the organizers and working members of the United States Sanitary Commission. The commission was materially aided in its operations by his industrious labor, and guided by his wisdom. It is no more than the simple truth to say that every sick man and every wounded man in the Union Army had his condition alleviated, so far as mitigation of the horrors of war was possible, by appliances that were largely due to Dr. Agnew's forethought and executive skill. In another sphere, as one of the trustees of Columbia College, his efforts to improve the institution were constant,

and it is not to be doubted that they had much to do with bringing about the very decided advances made by the college during the last few years; and in a like capacity on the board of the College of Physicians and Surgeons he worked intelligently and zealously for the advancement of medical education in New York. In his devotion to the public interest he did not disdain to concern himself with political discussions and contests—never as a partizan or with any motive looking to his own advantage, but always as a source of light to those who were right at heart but perplexed in mind. In whatever sphere he acted, he always influenced men's minds powerfully, but, although he was a speaker delightful to listen to, he never resorted to oratorical devices, and seldom even to parliamentary tactics; it was rather his clear, cold logic, his evident fairness, and his unquestioned devotion to the general welfare that gave him his power in debate. Consequently, he never worked his hearers up to the point of voting under the influence of passion, and they never regretted having heeded his words. It long ago came to be understood in New York that Dr. Agnew's advocacy of any movement was *prima facie* evidence that the movement was a good one. To be sure, not every cause that he supported triumphed—occasionally intrigue, and on one memorable occasion mediævalism, proved too much for him—but never did an opponent indulge in innuendo against Agnew without writing himself an ass. He was a man whose course it was never necessary to explain; he was *sans peur et sans reproche*.

Personally, Dr. Agnew was a man of wholesome and attractive appearance. His glance was clear and penetrating, but kindly. He played the Mentor to many a misguided spirit, but his advice was given only when it was invited, and it always savored more of affection than of rebuke. With the community, with his professional brethren, with his patients, with his personal friends, and in his family, he was a remarkably exemplary man. His loss is that not only of the New York profession of medicine, but that of the entire people.—*N. Y. Med. Jour.*